

International Conference on Theoretical Physics
Organized by

The Science Council of Japan
with the Collaboration of Kyoto University and the Physical Society of Japan
under the Auspices of the
International Union of Pure and Applied Physics
supported by
U.N.E.S.C.O. and the Rockefeller Foundation.
Tokyo and Kyoto, Japan
September 14 - 23, 1953

1. SUBJECTS TO BE DISCUSSED

a. Field Theory and Theory of Elementary Particles.

Field theory in general, quantum electrodynamics, mesons, nucleons, cosmic rays, nuclear structure and reaction.

b. Statistical Mechanics.

General methods, phase change, liquid, polymers, transport phenomena, irreversible processes, liquid helium.

c. Solid State Physics and Molecular Physics.

Crystal dislocation.

Electronic structure of molecules.

Electron theory of solids, including magnetism, ionic crystals and dielectrics, semi-conductors, colour centre, etc.

Superconduction.

Apart from the above subjects, special topics on (1) crystal dislocation and (2) molecular physics will be discussed at informal symposia, to be held prior to the main sessions, as mentioned in p. 3.

2. CONFERENCE SCHEDULE (SUBJECT TO FURTHER MODIFICATION AND ELABORATION AS PREPARATIONS ADVANCE)

14 Sept. (Mon.)

Tokyo

Morning:

Registration at the University of Tokyo.

Afternoon :

Welcome Buffet Reception by the Minister of Education.

Evening:

Entertainment sponsored by the Physical Society of Japan.

Accommodation at Imperial Hotel, Hotel Tokyo, Hotel Teito etc.

15 Sept. (Tue.)

Tokyo

Morning:

Opening Session at the University of Tokyo.

Afternoon:

Visits to universities and research institutes in Tokyo.

Evening:

Welcome Reception Dinner by the Presidents of the Science Council of Japan and the Japan Academy.

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16 Sept. (Wed.) Tokyo - Hakone - Atami

10:21 a.m. Leave Tokyo by train No. 813 for Fuji-Hakone National Park.
1:00 p.m. Arrive Hakone. Lunch at Hakone Hotel, on the shores of
 Lake Hakone.
3:30 p.m. Leave Hakone by motor-coach for Atami via Ten Province
 Pass.
5:00 p.m. Arrive Atami, hot-spring resort.

 Dinner and accommodation at Atami Hotel and Atami Kanko Hotel.

17 Sept. (Thu.) Atami - Kyoto

12:26 p.m. Leave Atami by Express Train No. 1001 for Kyoto.

 Luncheon and tea on train.

7:58 p.m. Arrive Kyoto.

 Dinner and accommodation at Kyoto Hotel, Miyako Hotel,
Kyoto Station Hotel, etc. during the period of the main
 sessions.

18 Sept (Fri.) Kyoto

Morn. & Aftern. Main sessions (full day).
Evening: Reception by the President of Kyoto University.

19 Sept. (Sat.) Kyoto

Morning: Main Sessions (half day).
Afternoon: Sightseeing by motor-coach in and around Kyoto.

20 Sept. (Sun.) Kyoto

Morning: Excursion to Nara, ancient city of temples and shrines,
and Afternoon: including Horyuji, the world's oldest wooden edifice.

21 Sept. (Mon.) Kyoto

Morning Main Sessions (full day).
and Afternoon:

22 Sept. (Tue.) Kyoto

Morning: Main Sessions (half day).
Afternoon: Garden Party, sponsored by the Prefectural and Municipal
 Governments and the Local Chamber of Commerce.

23 Sept. (Wed.) Kyoto

Morning Main Sessions (full day).
and Afternoon:

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During each half-day session, two or three lectures taking about 30 or 40 minutes each will be delivered, to be followed by questions and discussions. Abstracts of Japanese papers and reviews of work related to the subjects of the sessions will be included in the preprints to be distributed to the participants.

Facilities will be provided to hold small informal meetings for dealing with topics on which need may be felt during the main sessions for more thorough discussion on a free-talking basis.

Prior to the above functions, on 12 and 13 September, an excursion will be held to visit Nikko, situated in one of our national parks and famous for its natural and architectural beauty. All conference participants are welcome to this excursion.

Two symposia are scheduled for the 11th and 12th, and those desiring to participate will leave for Nikko on the morning of the first day. Subjects to be treated are particular problems in: (1) Molecular Physics, and (2) Crystal Dislocation.

On the evening of Sept 24, after the main sessions, the attendants will be invited to a Reception by the President of Osaka University, situated in the neighboring industrial metropolis, and Conference participants might either spend the earlier part of the day in visits to the different institutions in the Osaka University or in group discussions in Kyoto or in Osaka.

The post-conference excursions will start with breakfast on Sept. 25.

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3. PROGRAMME OF MAIN SESSIONS (Subject to further revision as preparations advance.)

| | | | |
|----------------|--|--|--|
| 18th (Fri.) | FIELD THEORY IN GENERAL AND QUANTUM ELECTRO DYNAMICS | CRYSTAL DISLOCATIONS Mott: Dislocations Seitz: Kirkendall Effect | MOLECULAR STRUCTURE Slater: Molecular structure Mulliken: Intermolecular forces |
| | | POLYMERS Flory: Polymers | ELECTRONIC STRUCTURE OF SOLIDS Coulson: Theory of metals Onsager: Diamagnetism in metals |
| 19th (Sat.) | | STATISTICAL MECHANICS Mayer: Theory of liquid | MAGNETISM Slater: Ferromagnetism |
| | | AFTERNOON FREE | |
| 21st (Mon.) | MESONS AND COSMIC RAYS | STATISTICAL MECHANICS Kirkwood: Theory of liquid Prigogine: Irreversible Processes | MAGNETISM Neel: Ferrimagnetism (?) Bloembergen: Magnetic relaxation |
| | | STATISTICAL MECHANICS De Boer: Quantum properties of condensed phases | DIELECTRICS AND SEMICONDUCTORS Fröhlich: Dielectrics |
| 22nd (Tue.) | | AFTERNOON FREE | |
| | | LIQUID HELIUM Onsager: Liquid helium | DIELECTRICS AND SEMICONDUCTORS Seitz: Colour centre |
| 23rd (Wed.) | NUCLEUS | | |
| | | SUPERCONDUCTIVITY Fröhlich: Superconductivity | |

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Titles of Papers to be Read by Invited Scientists During Session On

Statistical Mechanics and Solid State Physics

(Subject to Supplementation)

| <u>Name</u> | <u>Title</u> |
|-------------|--|
| Bloembergen | 1. Magnetic relaxation in solids. 2. Radiowave study of the hydrogen molecule (Molecular Physics Symposium). |
| De Boer | Theoretical treatment of the quantum properties of condensed systems. |
| Coulson | 1. A new approach to the theory of metals. 2. Recent trends in the theory of large molecules (Molecular Physics Symposium). |
| Flory | Polymer (precise title not yet known). |
| Fröhlich | 1. Electrons in dielectrics. 2. Superconductivity. |
| Kirkwood | Statistical mechanical theory of the liquid state. |
| J.E. Mayer | Liquids (precise title not yet known). |
| Mott | Dislocations and the property of solids. |
| Mulliken | 1. Intermolecular charge- transfer forces. 2. Interactions between } Molecular Physics donors and acceptors. } Symposium. |
| Néel | Ferrimagnetism (precise title not yet known). |
| Onsager | 1. Diamagnetism in metals. 2. General talk on the theory of superfluid helium. |
| Prigogine | Some recent applications of thermodynamics to irreversible processes. |
| Seitz | 1. Theory of the Kirkendall effect. 2. Theory of colour centres in the alkali halides. |
| Slater | 1. Summary of work in MIT in molecular structure. 2. Relation between configuration interaction and ferromagnetism. |

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